

Abstract Submitted
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Fourier photospectroscopy of Xe@C₆₀ in the Xe 4d giant resonance region: Testing the single-photoionization theory against recent measurements¹ AAKASH PATEL, HIMADRI CHAKRABORTY, Chemistry and Physics, Northwest Missouri State University, Maryville — We have developed a technique, based on Fourier-transforming cross sections to the reciprocal configuration space, to explore the electronic multiple interferences in the photoionization of endohedral fullerene molecules. Using this technique, the single photoionization cross section of endohedral Xe@C₆₀ over Xe 4d giant resonance energy region, calculated in the time dependent local density approximation (TDLDA), is compared with recent double photoionization experimental data [1]. The analysis of oscillatory cross sections derives a number of inherent similarities between the prediction and the data, including a large beating-type oscillation and several others of intermediate size [2]. Results stress the need for more accurate measurements to access the wealth of information about the geometry of the system.

[1] A.L.D. Kilcoyne et al., *Phys. Rev. Lett.* **105**, 213001 (2010);

[2] A.B. Patel and H.S. Chakraborty, *J. Phys. B Fast Track Comm.* **44**, 191001 (2011).

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